

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2037-05-01T19:00:40.940
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3368245711533483392
 2Mass ID (if available) : 07081627+2256336

ICRS Star Coord at Epoch: 07h 08m 16.26103s +22:56:33.68935s

RUWE (>1.4 is poor) : 1.10
 K magnitude : 12.759
 G magnitude : 13.878
 RP magnitude : 13.474
 BP magnitude : 14.131
 DUPflag : 0
 Distance (au) : 19.158
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 19.29
 Sun-Target sep (deg) : 64.46
 Sun-Moon sep (deg) : 141.74
 B (ring opening deg) : 60.88
 PA of pole (deg) : 79.87

a(km) ring

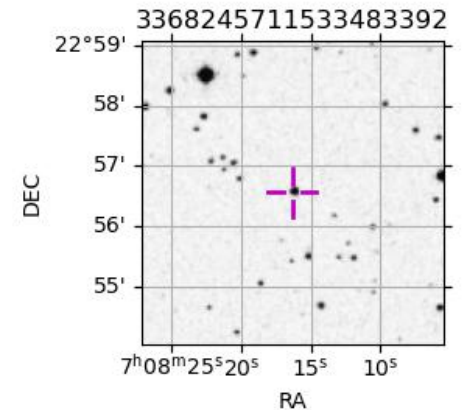
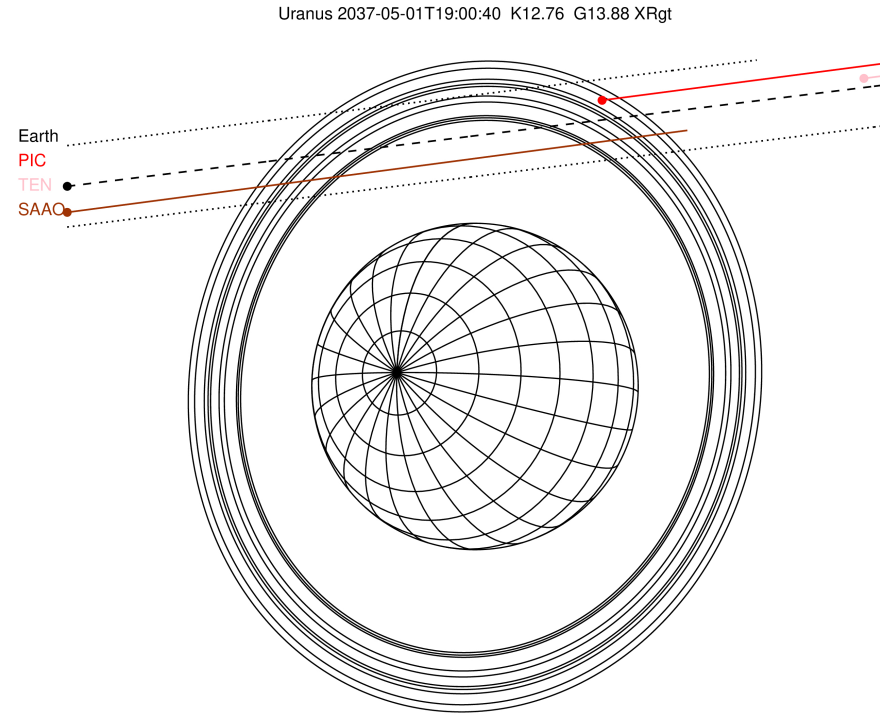
 1 41837.2 6
 2 42235.0 5
 3 42571.2 4
 4 44718.5 alpha
 5 45661.1 beta
 6 47176.1 eta
 7 47626.3 gamma
 8 48300.3 delta
 9 50026.7 lambda
 10 51149.4 epsilon

Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEncode
PIC	Pic du Midi	42.9	0.1			++	MAY 01 19:25 - MAY 01 19:27	PnnRne
PAL	Palomar Mt (200")	33.4	243.1					PnnRnn
PMO	Purple Mtn Obs. Nanki	32.1	118.8					PnnRnn
KPNO	Kitt Peak Natl Obs	32.0	248.4					PnnRnn
MCD	McDonald Obs. 2.7m	30.7	256.0					PnnRnn
TEN	Teide Obs./Tenerife	28.3	343.5					PnnRnn
IRTF	Mauna Kea/IRTF	19.8	204.5					PnnRnn
KAV	Kavalur Observatory	12.6	78.8					PnnRnn
RIO	Rio de Janeiro	-22.9	316.8					PnnRnn
ESO	European Southern Obs	-29.3	289.3					PnnRnn
AAT	Siding Spring (AAT)	-31.3	149.1					PnnRnn
SAAO	So. Afr. Astro. Obs.	-32.4	20.8	+++++		+++++	MAY 01 18:38 - MAY 01 19:35	PnnRie
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn

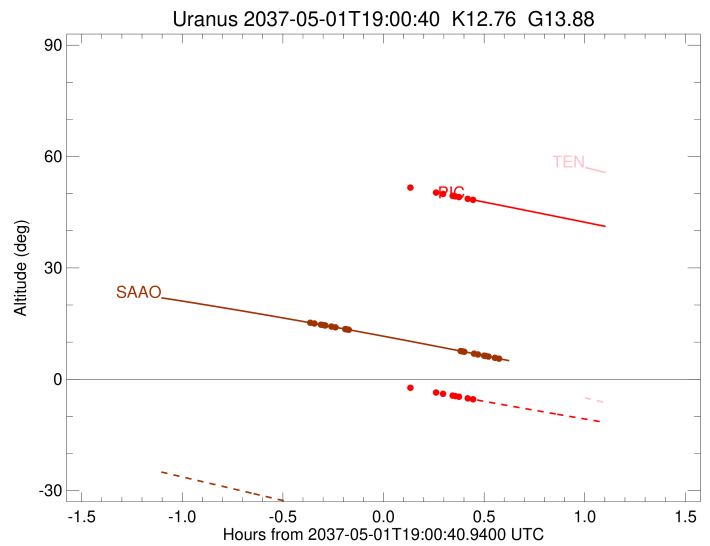
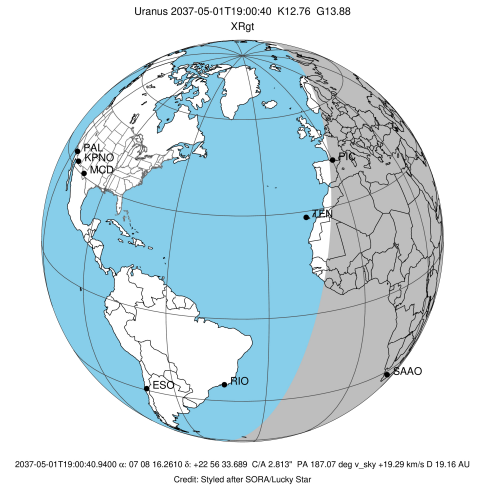


2037-05-01T19:00:40.9400 ex: 07 08 16.2610 s: +22 56 33.689 C/A 2.813° PA 187.07 deg v_sky +19.29 km/s D 19.16 AU
 Credit: Styled after SORA/Lucky Star



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target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2037-05-01T19:02:39.910
Event type          : XRgt
: No Uranus occs
: Ring occs: geocentric, topocentric
Observer code       : PIC
Location            : Pic du Midi
Latitude (deg)      : 42.93656
E. Longitude (deg)  : 0.14231
Altitude (km)       : 2.890
Gaia source ID      : 3368245711533483392
2Mass ID (if available) : 07081627+2256336
ICRS Star Coord at Epoch: 07h 08m 16.26103s +22:56:33.68935s
RUWE (>1.4 is poor) : 1.10
K magnitude          : 12.759
G magnitude          : 13.878
RP magnitude         : 13.474
BP magnitude         : 14.131
DUPflag             : 0
Distance (au)       : 19.158
f0 (km)             : 0.000
g0 (km)             : 0.000
skyplane vel. (km/s) : 19.29
Sun-Target sep (deg) : 64.46
Sun-Moon sep (deg)  : 142.55
B (ring opening deg) : 60.88
PA of pole (deg)    : 79.87
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 3.014
C/A sky separation (km) : 41872.7
NAIF SPICE kernels  : RAJobs_U111+rgf15.spk
URKALLvl1.spk
urall1.bsp
IAU_URANUS_for_RINGFIT.tpc
vgr2.urall1.bsp
ural61.bsp
vgr2.ural61.bsp
peph.ural60.bsp
earthstns_itr93_040916.bsp
earth_720101_070426.bpc
earth_200101_990628_predict.bpc
pg3f0000r.bsp
pg490000r.bsp
naif0012.tls
earth_flat_IAU.spk
  
```

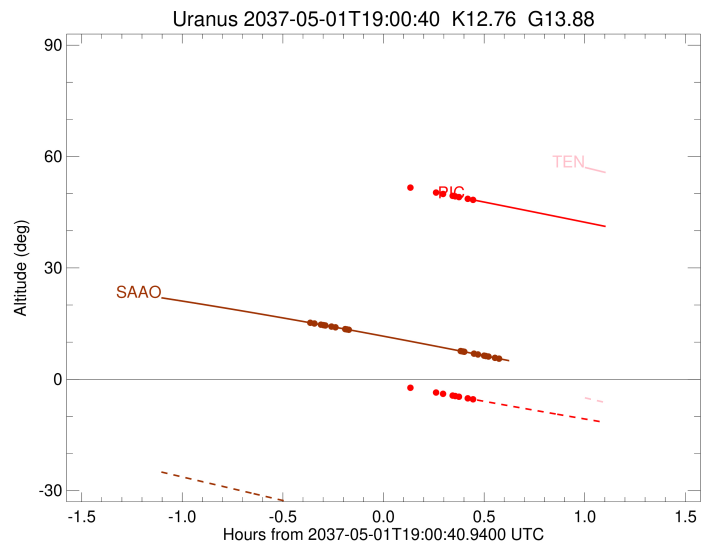
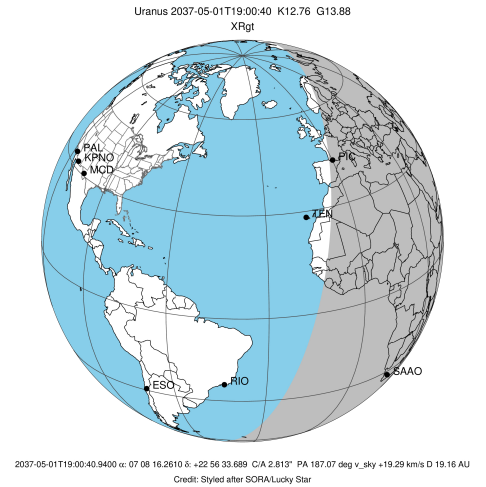


Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2037-05-01T18:42:29.664		56.11	2.19x	51539.53	-12.31		
lambda	I	2037-05-01T18:44:37.061		55.76	1.82x	50026.71	-11.46		
delta	I	2037-05-01T18:47:15.134		55.31	1.37x	48300.35	-10.36		
gamma	I	2037-05-01T18:48:22.321		55.13	1.17x	47621.28	-9.85		
eta	I	2037-05-01T18:49:08.341		55.00	1.04x	47176.12	-9.49		
beta	I	2037-05-01T18:52:00.717		54.51	0.55x	45660.37	-8.06		
alpha	I	2037-05-01T18:54:10.847		54.14	0.17x	44684.87	-6.88		
4	I	2037-05-01T19:01:35.473		52.87	-1.09x	42602.20	-2.35		

No planet occultations

4	E	2037-05-01T19:08:45.706		51.62	-2.30x	42594.28	2.35		
alpha	E	2037-05-01T19:16:14.520		50.31	-3.56x	44689.22	6.89		
beta	E	2037-05-01T19:18:25.995		49.92	-3.92x	45674.53	8.08		
eta	E	2037-05-01T19:21:16.415		49.42	-4.39x	47176.12	9.51		
gamma	E	2037-05-01T19:22:02.392		49.28	-4.52x	47621.88	9.87		
delta	E	2037-05-01T19:23:09.362		49.08	-4.70x	48300.35	10.38		
lambda	E	2037-05-01T19:25:47.025		48.61	-5.13	50026.71	11.50		
epsilon	E	2037-05-01T19:27:41.814		48.27	-5.45	51389.34	12.35		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2037-05-01T19:04:52.380
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Observer code : SAAO
 Location : So. Afr. Astro. Obs. (Sutherland)
 Latitude (deg) : -32.37953
 E. Longitude (deg) : 20.81070
 Altitude (km) : 1.768
 Gaia source ID : 3368245711533483392
 2Mass ID (if available) : 07081627+2256336
 ICRS Star Coord at Epoch: 07h 08m 16.26103s +22:56:33.68935s
 RUWE (>1.4 is poor) : 1.10
 K magnitude : 12.759
 G magnitude : 13.878
 RP magnitude : 13.474
 BP magnitude : 14.131
 DUPflag : 0
 Distance (au) : 19.158
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 19.29
 Sun-Target sep (deg) : 64.46
 Sun-Moon sep (deg) : 142.40
 B (ring opening deg) : 60.88
 PA of pole (deg) : 79.87
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 2.548
 C/A sky separation (km) : 35398.9
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk
 URKALLvl.spk
 ura111.bsp
 IAU_URANUS_for_RINGFIT.tpc
 vgr2.ura111.bsp
 ura161.bsp
 vgr2.ura161.bsp
 peph.ura160.bsp
 earthstns_itrf93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2037-05-01T18:38:29.195		15.28	-34.31	51509.66	-15.57		
lambda	I	2037-05-01T18:40:06.135		15.02	-34.65	50026.71	-15.07		
delta	I	2037-05-01T18:42:02.890		14.70	-35.06	48300.35	-14.49		
gamma	I	2037-05-01T18:42:50.130		14.57	-35.23	47621.88	-14.23		
eta	I	2037-05-01T18:43:21.643		14.49	-35.34	47176.12	-14.06		
beta	I	2037-05-01T18:45:12.310		14.19	-35.73	45654.70	-13.40		
alpha	I	2037-05-01T18:46:25.489		13.99	-35.98	44687.86	-12.91		
4	I	2037-05-01T18:49:13.341		13.52	-36.57	42613.77	-11.71		
5	I	2037-05-01T18:49:49.019		13.43	-36.70	42193.09	-11.45		
6	I	2037-05-01T18:50:24.717		13.33	-36.82	41805.74	-11.14		

No planet occultations

6	E	2037-05-01T19:23:36.503		7.62	-43.79	41797.30	11.18		
5	E	2037-05-01T19:24:19.225		7.49	-43.94	42278.26	11.49		
4	E	2037-05-01T19:24:44.653		7.41	-44.03	42574.46	11.75		
alpha	E	2037-05-01T19:27:36.385		6.90	-44.63	44695.94	12.97		
beta	E	2037-05-01T19:28:50.758		6.68	-44.88	45678.20	13.46		
eta	E	2037-05-01T19:30:39.315		6.36	-45.26	47176.12	14.12		
gamma	E	2037-05-01T19:31:10.742		6.26	-45.37	47622.73	14.30		
delta	E	2037-05-01T19:31:57.702		6.12	-45.53	48300.35	14.56		
lambda	E	2037-05-01T19:33:53.880		5.77	-45.93	50026.71	15.15		
epsilon	E	2037-05-01T19:35:18.206		5.52	-46.22	51321.18	15.65		